

What is claimed is:

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5 1. An energy and power interchange system comprising a system including energy generating means which generates transmittable energy using an energy source, an energy path which transmits energy generated by said energy generating means, a measuring equipment which is mounted on said energy path for measuring an amount of energy which is transmitted through said energy path, and a system which consumes energy

10 supplied by way of said energy path, the improvement being characterized in that said energy sources used by said energy generating means and said generated energy amount are controlled in response to said energy amount measured by said measuring equipment.

15 2. An energy and power interchange system comprising a first system including power generating facilities, a second system in foreign countries having power generating facilities, an energy path constructed by a direct current transmission system

20 which interconnects said first system and said second system, and a measuring equipment which is mounted on said energy path and measures an energy amount transmitted through said energy path, the improvement being characterized in that control parameters of said

25 first and second systems are changed or said transmitting direction of energy is decided in response to said energy amount measured by said measuring equipment.

30 3. An energy and power interchange system comprising an energy path constituted by a direct current transmission system which interconnects systems of at least three different countries having power generating facilities and a measuring equipment

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$\lambda$	$\lambda^2$	$\lambda^3$	$\lambda^4$	$\lambda^5$	$\lambda^6$	$\lambda^7$	$\lambda^8$	$\lambda^9$	$\lambda^{10}$	$\lambda^{11}$	$\lambda^{12}$	$\lambda^{13}$	$\lambda^{14}$	$\lambda^{15}$	$\lambda^{16}$	$\lambda^{17}$	$\lambda^{18}$	$\lambda^{19}$	$\lambda^{20}$
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	4	8	16	32	64	128	256	512	1024	2048	4096	8192	16384	32768	65536	131072	262144	524288	1048576
3	9	27	81	243	729	2187	6561	19683	59049	177147	531441	1594323	4782969	14348907	43046721	129139161	387430483	1162291449	3486874347
4	16	64	256	1024	4096	16384	65536	262144	1048576	4194304	16777216	67108864	268435456	1073741824	4294967040	17179869440	68813926400	274897817600	1099551498240
5	25	125	625	3125	15625	78125	390625	1953125	9765625	48828125	244140625	1220703125	6103515625	30517578125	152587890625	762939453125	3814697265625	19073486328125	95367431640625
6	36	216	1296	7776	46656	279936	1679616	10077696	60466176	362793024	2176778176	13060669056	78364014720	470184088320	2821104529920	16926627179520	101559763077120	609338778462720	3656032670774400
7	49	343	2401	16807	117649	823543	5724253	39969769	279696343	1953534401	13674740807	95723185649	670062299543	4690436096801	32833052677607	229831368743249	1608819581202743	11261737068419201	78832159478934407
8	64	512	4096	32768	262144	2097152	16777216	134217728	1073741824	8589932032	68310067456	546480539648	4371844317184	34974754537472	279800036300160	2238400290401280	17907202323210240	143257618585683840	1146060948685470720
9	81	729	6561	59049	531441	4782969	43046721	387430483	3486874347	31119992023	278079928207	2484719353869	22122474184821	197102267663389	1753920408970501	15585283680734509	138167553126610581	1223507978139495229	10891571803255467061
10	100	1000	10000	100000	1000000	10000000	100000000	1000000000	10000000000	100000000000	1000000000000	10000000000000	100000000000000	1000000000000000	10000000000000000	100000000000000000	1000000000000000000	10000000000000000000	100000000000000000000

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7. An energy and power interchange system according to claim 2, wherein a power storage equipment is installed in at least one of said systems and the input and output of said power storage equipment is controlled in response to change of power flow rate between systems.

8. An energy and power interchange system according to claim 1, wherein said energy path is one selected from a group consisting of an alternating current system, a direct current interconnecting system, a pipeline, a transport path and an electric wave path.

9. An energy and power interchange system according to claim 2, wherein the above-mentioned respective systems are located at countries which differ in circulating currency and they convert to the preliminarily decided currency unit or carry out such a conversion based on information on exchange rate or said respective systems are located in countries which differ in languages and said information is transmitted by way of translating machines.

10. An energy and power interchange system according to claim 2, wherein said system comprises one system which includes many thermal power facilities and the other system which includes many hydro electric power facilities, and generated power amount is controlled such that overall fuel consumption amount of said system which includes many thermal power facilities is lower than predetermined value and energy is transmitted from said system which includes many hydro electric power facilities.

11. An energy and power interchange system according to claim 2, wherein said system comprises a system

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conclusion of contract or interchange control by said interchange administration equipment may be at least one of CO<sub>2</sub> emission right which concerns with CO<sub>2</sub> emission utilities, fuel, electrical energy or money.

5 16. An energy and power interchange system according to claim 2, wherein said energy and power interchange system is provided with a power interchange control equipment and such a power interchange control equipment decides operating condition of said  
10 generator, or operating condition of said power storage equipment, or interchanged electrical energy between said alternating current systems using at least one of interchangeable electrical energy, electrical energy, load of respective alternating  
15 current systems, generated energy, emergency power source or an interchange power command value is decided using at least one of demand information, power generating information, exchange rate information, power generating cost information and  
20 power transmission information, or using at least one of power cost, power generating and transmission cost, CO<sub>2</sub> emission amount, load balancing index, demand and supply balance index, or power supply and a reliability index of respective countries or regions  
25 or every hours or every seasons is formed as an object function, and an interchanging power command value is decided based on calculation result of a calculation processing equipment which executes an optimization calculation.

30 17. An energy and power interchange method characterized in that a first system which is provided with power generating facilities and a second system in a foreign country which is provided with power

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